

Self-Management in Future Internet Wireless Networks

Special session (half day).

Motivation and Scope

An increasing number of processes (many of which have explicit business impacts) need to be automated in the networks of the future, i.e. they have to be performed upon relevant autonomous decisions, without any human intervention. Today's ICT systems are not inherently able to "learn" from past (or current) experience and cannot contextualize and adapt to evolutionary processes, based on their own observation and learning processes. However, many ICT applications cannot be developed further, if there are no new breakthroughs in systems' intelligence and engineering. Overcoming such technology "roadblocks" can permit the emergence of a wide range of opportunities in novel application fields, also including management (and re-configuration) of communications networks. In particular, in the context of the Future Internet, networks possessing cognitive features are often quoted as being one the "key" next-generation communications technologies and are expected to lead to a much improved communication service, while providing efficient solutions to various problems currently experienced by market "actors".

A prime challenge of the Future Internet is to provide means that will enable cognitive network management through dynamic, ad-hoc and optimized resource allocation and control, fault tolerance and robustness associated with real-time trouble shooting capabilities. Thus, the attribute of autonomic network management (or "self-management") becomes an essential issue as it affects variable domains, most of which are essential for the effective network's behaviour, under several (predicted or even unpredicted) circumstances. The unified network infrastructure of the future (composing the "Future Internet") should support a number of parallel network architectures with distinctive traffic and quality characteristics. As wireless communications are becoming increasingly pervasive, the anticipated traffic rates and new usage patterns challenge the current static and peak/best effort-based network configurations and/or dimensioning, calling for more efficient and flexible infrastructures that can support dynamic resource allocation and new traffic routing (i.e. "intelligent routing") schemes.

Under the sponsorship of the actual "Self-NET" ("Self-Management of Cognitive Future Internet Elements") Project effort (FP7, ICT-2-1.6, Grant Agreement No.224344) the goal of this Special Session is to present recent developments in the wider topic of "self-management" – related issues, as the latter are identified in modern wireless infrastructures, thus intending to conceptualize and/or to develop novel concerns, for an effective realization of the evolution towards related Future Internet networks/structures.

Important dates:

<i>Paper submission deadline</i>	<i>January 15, 2010</i>
<i>Notification of Acceptance</i>	<i>February 15, 2010</i>
<i>Final paper</i>	<i>March 15, 2010</i>

The papers should be submitted electronically in PDF format and using the MOBILIGHT paper template, through the MOBILIGHT webpage (www.mobilight.org/) following the instructions given in the Submission Guidelines section.

Accepted papers will be published by Springer in the MOBILIGHT Conference Proceedings and made available online through Springer Lecture Notes of ICST (LNICST).

Note: Papers submitted to each workshop should be original and peer reviewed by the program committee and external reviewers. An accepted paper must be registered and presented at the workshop venue.

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